Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

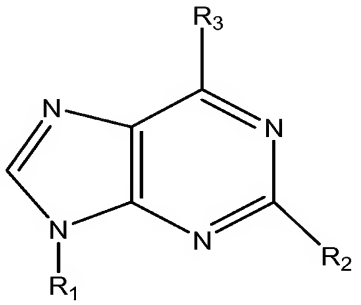
Listing of Claims:

1-10 (Cancelled)

11 (Currently Amended). A method for treating an individual suffering from multiple sclerosis (MS) comprising ~~administrating~~ administering to said individual an A3 adenosine receptor agonist (A3RAg).

12. (Currently Amended) The method of Claim 11, wherein said A3RAg is orally administered.

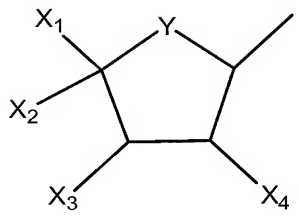
13 (Currently Amended). The method of Claim 11, wherein said A3RAg is a compound within the scope of the general formula (I):



(I)

wherein,

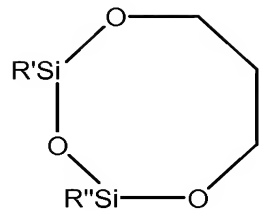
- R_1 represents an alkyl, hydroxyalkyl, carboxyalkyl or cyanoalkyl or a group of the following general formula (II):



(II)

in which:

- **Y** represents an oxygen, sulfur or CH_2;
- $\mathbf{X_1}$ represents H, alkyl, $R^aR^bNC(=O)$- or HOR^c-, wherein
  - $\mathbf{R^a}$ and $\mathbf{R^b}$ may be the same or different and are ~~selected from the group consisting of~~ hydrogen, alkyl, amino, haloalkyl, aminoalkyl, BOC-aminoalkyl, ~~and~~ or cycloalkyl or are joined together to form a heterocyclic ring containing two to five carbon atoms; and
  - $\mathbf{R^c}$ is ~~selected from the group consisting of~~ alkyl, amino, haloalkyl, aminoalkyl, BOC-aminoalkyl, ~~and~~ or cycloalkyl;
- $\mathbf{X_2}$ is H, hydroxyl, alkylamino, alkylamido or hydroxyalkyl;
- $\mathbf{X_3}$ and $\mathbf{X_4}$ represent independently hydrogen, hydroxyl, amino, amido, azido, halo, alkyl, alkoxy, carboxy, nitrilo, nitro, trifluoro, aryl, alkaryl, thio, thioester, thioether, -OCOPh, or -OC(=S)OPh or both $\mathbf{X_3}$ and $\mathbf{X_4}$ are oxygens connected to >C=S to form a 5-membered ring, or $\mathbf{X_2}$ and $\mathbf{X_3}$ form the ring of formula (III):



(III)

where **R'** and **R''** represent independently an alkyl group;

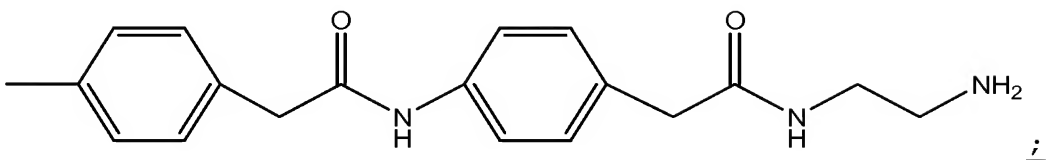
- R_2 is ~~selected from the group consisting of~~ hydrogen, halo, alkylether, amino, hydrazido, alkylamino, alkoxy, thioalkoxy, pyridylthio, ~~alkenyl;~~ alkenyl, alkynyl, thio, ~~and~~ or alkylthio; and

- R_3 is a group of the formula $-NR_4R_5$, wherein

- R_4 is a hydrogen atom or ~~a group selected from~~ alkyl, substituted alkyl or aryl-NH-C(Z)-, with **Z** being O, S, or NR^a with R^a having the above meanings;

~~wherein~~ with the proviso that when R_4 is hydrogen then

- R_5 is ~~selected from the group consisting of~~ an R- ~~and~~ or S-1-phenylethyl, benzyl, phenylethyl or anilide ~~groups~~ group, unsubstituted or substituted in one or more positions with a substituent that is ~~selected from the group consisting of~~ alkyl, amino, halo, haloalkyl, nitro, hydroxyl, acetoamido, alkoxy, ~~and~~ or sulfonic acid or a salt thereof; benzodioxanemethyl, fururyl, L-propylalanylaminobenzyl, β-alanylaminobenzyl, T-BOC-β-alanylaminobenzyl, phenylamino, carbamoyl, phenoxy or cycloalkyl; or R_5 is a group of the following formula:

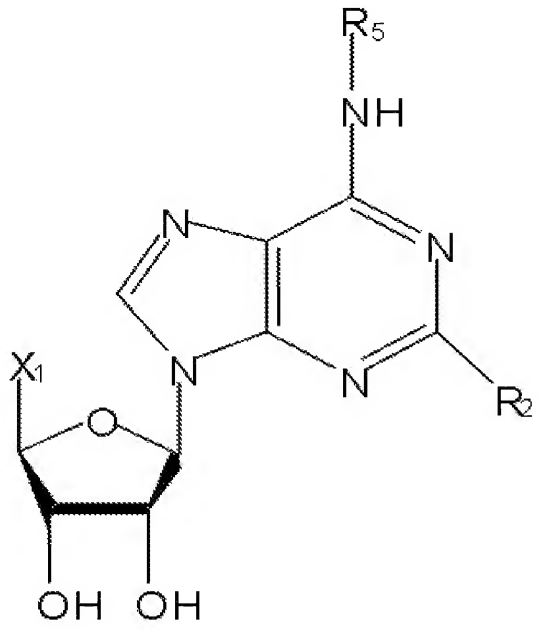


;

~~or~~ and with the further proviso that when R_4 is an alkyl or aryl-NH-C(Z)-, then, R_5 is ~~selected from the group consisting of~~ heteroaryl-NR^a-C(Z)-, heteroaryl-C(Z)-, alkaryl-NR^a-C(Z)-, alkaryl-C(Z)-, aryl-NR-C(Z)- ~~and~~ or aryl-C(Z)-, **Z** representing an oxygen, ~~sulfor~~ sulfur or amine;

or a physiologically acceptable salt of the above compound.

14 (Currently Amended). The method of claim 11, wherein said A3RAg is a nucleoside derivative of the general formula (IV):



(IV)

wherein,

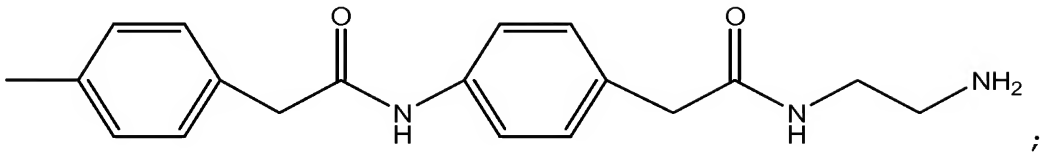
- X_1 represents H, alkyl, $R^aR^bNC(=O)$- or HOR^c-, wherein

- R^a and R^b may be the same or different and are ~~selected from the group consisting of~~ hydrogen, alkyl, amino, haloalkyl, aminoalkyl, BOC-aminoalkyl, ~~and~~ or cycloalkyl or are joined together to form a heterocyclic ring containing two to five carbon atoms; and

- R^c is ~~selected from the group consisting of~~ alkyl, amino, haloalkyl, aminoalkyl, BOC-aminoalkyl, ~~and~~ or cycloalkyl;

- R_2 is ~~selected from the group consisting of~~ hydrogen, halo, alkylether, amino, hydrazido, alkylamino, alkoxy, thioalkoxy, pyridylthio, ~~alkenyl;~~ alkenyl, alkynyl, thio, ~~and~~ or alkylthio; and

- R_5 is ~~selected from the group consisting of~~ an R- ~~and~~ or S-1-phenylethyl, benzyl, phenylethyl or anilide ~~groups~~ group, unsubstituted or substituted in one or more positions with a substituent that is ~~selected from the group consisting of~~ alkyl, amino, halo, haloalkyl, nitro, hydroxyl, acetoamido, alkoxy, ~~and~~ or sulfonic acid or a salt thereof; benzodioxanemethyl, fururyl, L-propylalanylaminobenzyl, β-alanylaminobenzyl, T-BOC-β-alanylaminobenzyl, phenylamino, carbamoyl, phenoxy or cycloalkyl; or R_5 is a group of the following formula:



;

and physiologically acceptable salts of said nucleoside derivative.

15 (Currently Amended). The method of Claim 11, wherein said A3RAg is ~~selected from~~ N^6-2- (4-aminophenyl)ethyladenosine (APNEA), N^6-(4-amino-3-iodobenzyl) adenosine- 5'-(N-methyluronamide) (AB-MECA), N^6-(3-iodobenzyl)-adenosine-5'-N- methyluronamide (IB-MECA) ~~and~~, or 2-chloro-N^6-(3-iodobenzyl)- adenosine-5'-N-methyluronamide (Cl-IB-MECA).